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EXAMINER

KNABLE, GEOFFREY L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/050,036	Applicant(s) O'COIN, BERNARD J.	
	Examiner Geoffrey L. Knable	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3-8-02 & 12-30-03</u> . | 6) <input type="checkbox"/> Other: ____. |

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1. Claims 11, 14 and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, defining that the tire "includes" a solid rubber tire is awkward and confusing - if this is requiring that the tire is a solid rubber tire, it would be clearer if "includes" were changed to for example "is". Otherwise, it is not clear what is meant by "includes" and how the solid tire would then relate to the claim 10 requirements.

In claim 14, lines 2-3, no antecedent has been established for "the step of providing a sufficient quantity of uncured rubber in the tread region".

In claim 17, step "c", it seems that "mold" should be added after "tread region", there being no antecedent for just a "tread region".

In claim 18, step (a), no antecedent has been established for "center region mold".

In claim 19, no antecedent has been established for "the further regions" (i.e. plural). Also, it is not clear how this claim differs from claim 16, this therefore creating an ambiguity.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention

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was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Dobson (US 4,722,377) or Lambe (US 3,022,810).

Dobson discloses a tire that clearly includes a tread region and rim region as well as a further region between the tread and rim regions that includes a closed cell foam (46, 62). Further, the tread region and rim engaging regions of the tire are clearly of substantially solid rubber. This is therefore considered to clearly satisfy the requirements of claims 1-10. Insofar as the tire in for example fig. 2 includes no air chambers, it is considered to be a solid tire as required by claim 11.

Similarly, Lambe discloses a tire that clearly includes a tread region and rim region as well as a further region between the tread and rim regions that includes a closed cell foam (11). Further, the tread region and rim engaging regions of the tire would have been understood to include substantially solid rubber. This is therefore considered to clearly satisfy the requirements of claims 1-10. Insofar as the tire in for example fig. 1 includes no air chambers, it is considered to be a solid tire as required by claim 11.

5. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-151905 or Huebner (US 1,227,791).

JP 11-151905 discloses a solid tire that clearly includes a tread region and rim region as well as a further region between the tread and rim regions that includes a foam (2), the foam including closed cells (note paragraph [0019] of the supplied machine translation). Further, the tread region and rim engaging regions of the tire are described as non-foam and thus include substantially solid rubber. This is therefore considered to

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clearly satisfy the requirements of claims 1-11. As to claim 12, paragraph [0019] of the machine translation indicates that the solid tire is molded as an assembly in a vulcanization mold with the rubber material for the foam layer including foaming (i.e. blowing) agents therein such that the material foams during the vulcanization shaping/molding. Further, as already noted, closed cells are formed. This is thus considered to satisfy claim 12.

Huebner discloses what is considered to be a solid tire that clearly includes a tread region and rim region as well as a further region between the tread and rim regions that includes a foam (6), the foam including closed cells (e.g. page 1, lines 17-28). Further, the tread region and rim engaging regions of the tire do not include the foaming ingredients and thus include substantially solid rubber. This is therefore considered to clearly satisfy the requirements of claims 1-11. As to claim 12, page 1, lines 43+ indicate that the tire is molded as an assembly in a vulcanization mold (page 1, line 104) with the rubber material for the foam layer including volatile ingredients which function as blowing agents therein such that the material foams during the vulcanization shaping/molding. Further, as already noted, closed cells are formed. This is thus considered to satisfy claim 12.

6. Claims 13-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-151905 or Huebner (US 1,227,791).

As to claim 13, although not explicitly mentioned, it is extremely well known to provide molds in general and tire molds in particular with venting means in various forms including holes, the inclusion of a vent hole being therefore obvious. As to claims 14-16

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and 19, the artisan would have been expected to readily and routinely optimize the particular amounts of rubber components as well as desired foam properties (and thus cell volume) to yield the results desired. Note also that in light of JP 11-151905, foaming expansion ratios that would seem to be inclusive of the claimed cell volume are understood as suitable, effective and therefore obvious in this art - note esp. paragraphs [0026]-[0028].

7. Claims 1-10 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Travers (US 3,195,601).

Travers discloses a tire that clearly includes a tread region and rim region as well as a further region between the tread and rim regions that includes a closed cell foam (e.g. 5 or 6). Further, the tread region and rim engaging regions of the tire would have been understood to include substantially solid rubber. This is therefore considered to clearly satisfy the requirements of claims 1-10. As to claim 17, Travers suggests separately molding each of rings 4, 5 and 6 - insofar as the rings can individually be termed as in a tread region (6), rim region (4) and further region (5) and since in each case the rings are molded from uncured rubber (including a foaming agent) (col. 2, lines 57+), the claim 17 requirements are considered satisfied.

8. Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 4-250027.

JP 4-250027 discloses a solid tire that clearly includes a tread region and rim region as well as a further region between the tread and rim regions that includes a foam (9 - note the figures and abstract). Further, the tread region and rim engaging regions

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would have been understood to be non-foam and thus include substantially solid rubber.

This is therefore considered to clearly satisfy the requirements of claims 1, 8 and 9.

9. Claims 2-7, 10-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 4-250027 taken in view of JP 11-151905.

As to claims 2-7, 10 and 11, JP 4-250027 is applied as above but there does not appear to be any specific characterization of the foam rubber and thus a closed cellular material is not explicitly taught. JP 11-151905 is also directed to a solid tire including a foam and in particular evidences an understanding that a suitable and effective foam in such tires is a foam including closed cells (note paragraph [0019] of the supplied machine translation). To provide the foam in the form of a closed cell foam would therefore have been obvious and lead to only the expected results.

As to claim 12, in light of fig. 5 of the reference, it is apparent that the solid tire is molded as an assembly in a vulcanization mold. Further, as depicted in fig. 5, the foam layer ("18") is not yet in a foamed form and thus would have been expected to foam during molding/curing of the assembly using blowing agents, such further being the conventional way to form such layers - e.g. note paragraph [0019] of the machine translation of JP 11-151905 indicates that the solid tire is molded as an assembly in a vulcanization mold with the rubber material for the foam layer including foaming (i.e. blowing) agents therein such that the material foams during the vulcanization shaping/molding. Further, as already noted, closed cells are formed. A process as defined in claim 12 is therefore considered to have been obvious. As to claim 13, although not explicitly mentioned, it is extremely well known to provide molds in general and tire molds in particular with venting means in

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various forms including holes, the inclusion of a vent hole being therefore obvious. As to claims 14-16 and 19, the artisan would have been expected to readily and routinely optimize the particular amounts of rubber components as well as desired foam properties (and thus cell volume) to yield the results desired. Note also that in light of JP 11-151905, foaming expansion ratios that would seem to be inclusive of the claimed cell volume are understood as suitable, effective and therefore obvious in this art - note esp. paragraphs [0026]-[0028].

10. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shomer et al. (US 1,263,947) taken in view of JP 11-151905 and JP 60-18407.

Shomer et al. discloses forming a solid rubber tire by preforming three different sections and then joining/cementing the sections to one another. Although not explicitly mentioned, insofar as these are vulcanized or rubber sections, the artisan would have found use of a mold for each to have been the most logical and reasonable means to preform each sections, it being of course extremely well known to use a mold to form a rubber section into a desired cured shape. This reference is thus considered to have rendered it obvious to provide molds and to mold the three different segments but does not suggest a rubber with blowing agent for the "further region" mold. With respect to the intermediate region "b", Shomer suggests that it be a soft rubber or other similar yielding material but does not expressly describe foamed rubber. JP 60-18407 is also directed to a solid tire including an elastic rubber layer and in particular suggests that a soft rubber or rubber foam body are both suitable (note the abstract). JP 11-151905 is also directed to a solid tire including a soft intermediate region material and in particular likewise evidences

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an understanding that it is suitable and effective to provide such as a rubber foam including closed cells (note paragraph [0019] of the supplied machine translation). In light of the apparent known alternatives of soft rubber and rubber foam as well as the known suitability of closed cell foams in this role (these being conventionally formed using blowing agents during curing), it is considered to have been obvious to substitute a rubber foam for the soft rubber in the intermediate layer of Shomer et al., forming this using the conventional blowing agents in uncured rubber.


11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

GB 2,183,565 discloses a solid tire formed from foamed plastics material. This reference is however at present less relevant than the other applied prior art as it does not explicitly suggest a foamed "rubber".

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Geoffrey L. Knable
Primary Examiner
Art Unit 1733

G. Knable
June 17, 2004